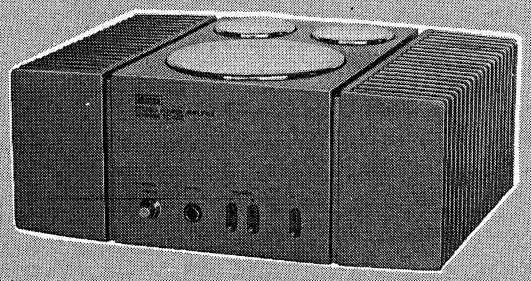
TOSHIBA

STEREO POWER AMPLIFIER

SC-M15



SPECIFICATIONS

Continuous Power Output	
20 Hz ~ 20 kHz Both ch. Driven:	45W x 2 (4 ohm) 40W x 2 (8 ohm)
1 kHz Both ch. Driven:	50W x 2 (4 ohm) 45W x 2 (8 ohm)
Total Harmonic Distortion:	0.02% (at rated power, 8 ohm)
Frequency Response:	0 ~ 70 kHz $^{+0}_{-1}$ dB
Power Bandwidth (IHF):	10 Hz ~ 70 kHz (0.1%)
Damping Factor:	60
S/N (IHF A Network):	115 dB

General	
Power Supply:	AC 220V 50 Hz or AC 240V 50 Hz
Power Consumption:	350W
Weight:	5.8 kg
Dimensions (mm):	257(W) x 106(H) x 211(D)

Specifications are subject to change without notice.

TE, TU, AY

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1. BLOCK DIAGRAM

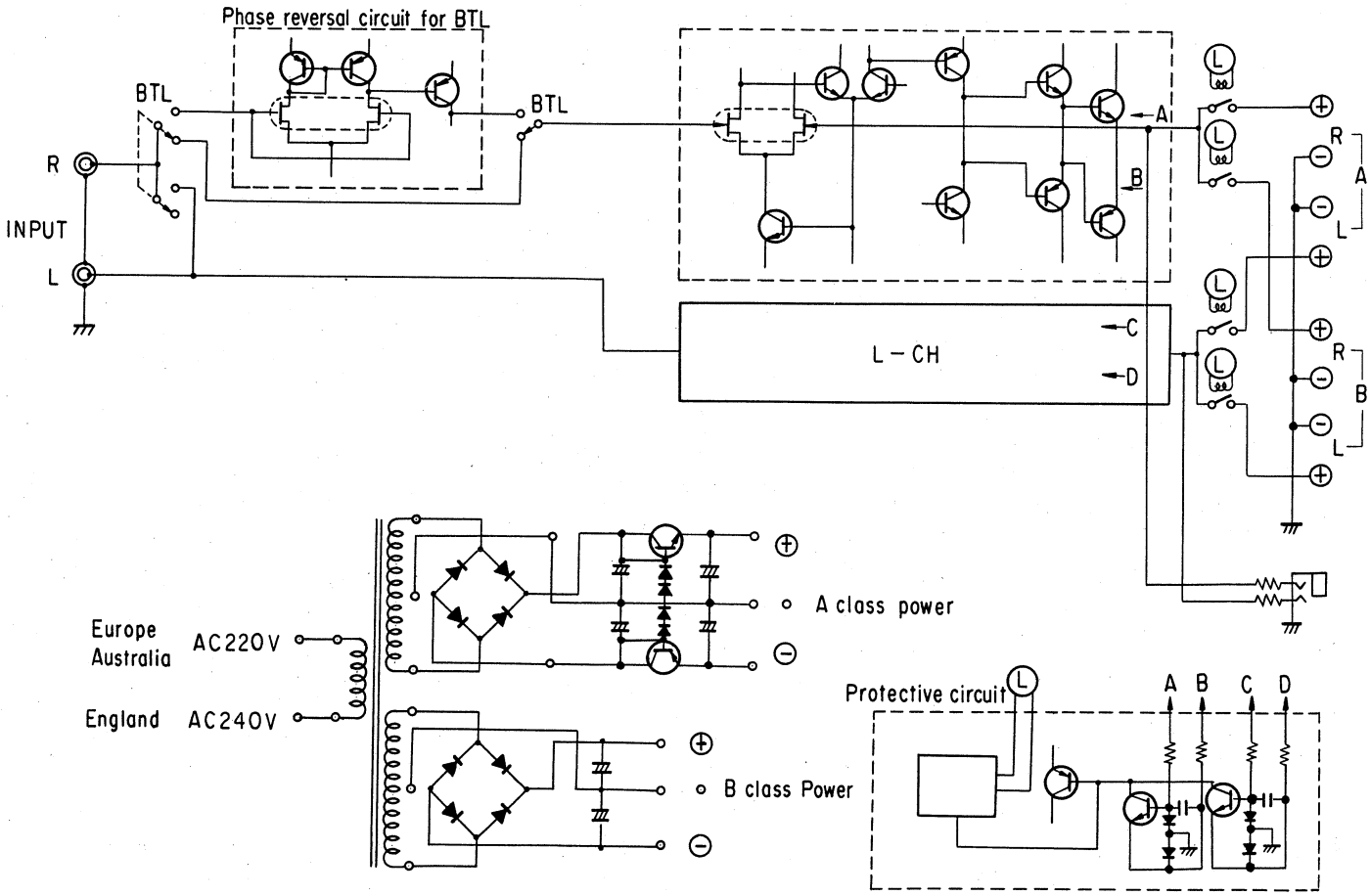


Figure 1.

2. OPERATING CONTROLS

FRONT VIEW

Cooling fins

These fins effectively dissipate the heat generated by the output transistors.

* These fins become fairly hot after the set has been operated continuously for an extended period of time. Therefore, ample caution must be exercised when carrying or otherwise handling the set.

Speaker selector push-button

Two push-buttons correspond to the speaker terminals on the rear panel.
Select according to the speaker system arrangement being used.

BTL switch

This switch is used when the amplifier is used as a monaural amplifier.

Figure 2.

REAR VIEW

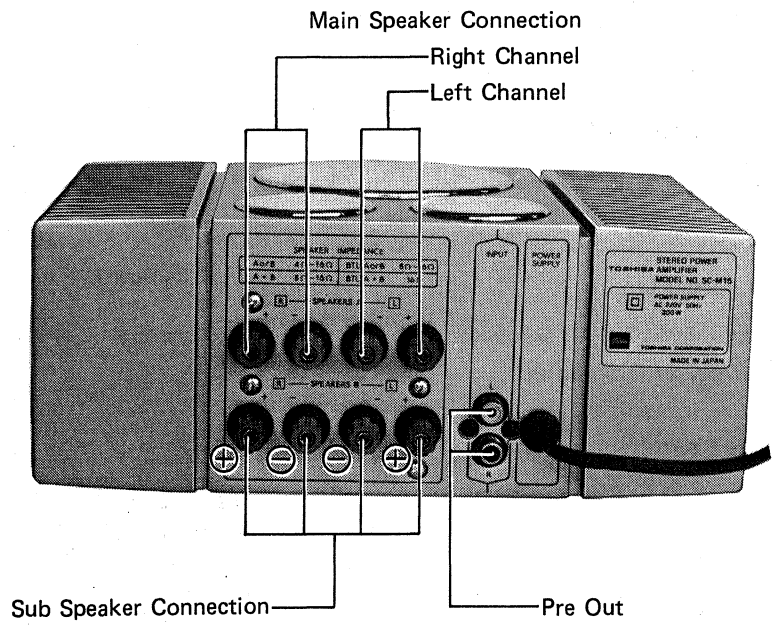


Figure 3.

3. DISASSEMBLY INSTRUCTIONS

BOTTOM PLATE REMOVAL

1. Remove 4 Screws ①. See figure 4.
2. Remove the bottom plate from the set.

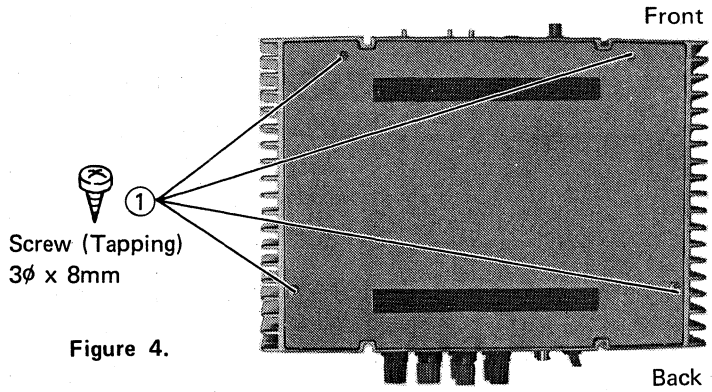


Figure 4.

MAIN P.C. BOARD REMOVAL

1. Remove the Bottom Plate. See figure 4.
2. Set the Power switch to "ON" position and 3 Push switches to "OFF" positions.
   CAUTION: Do not apply power.
3. Unsolder 12 pins of Transistors (Q617, Q618, Q619, Q620) from the Main P.C. Board. See figure 5.
4. Remove 2 screws ② securing Diodes at both sides. See figure 6.
5. Remove 4 screws ③ securing P.C. board and slide the P.C. Board backward. See figure 6.
6. Remove the Main P.C. Board from the set.

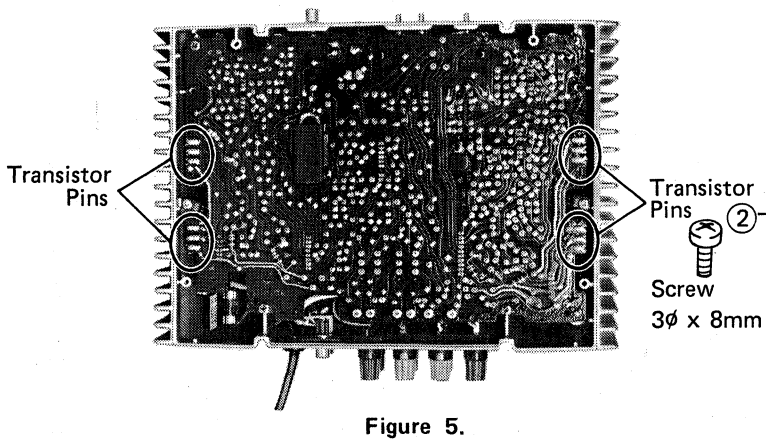


Figure 5.

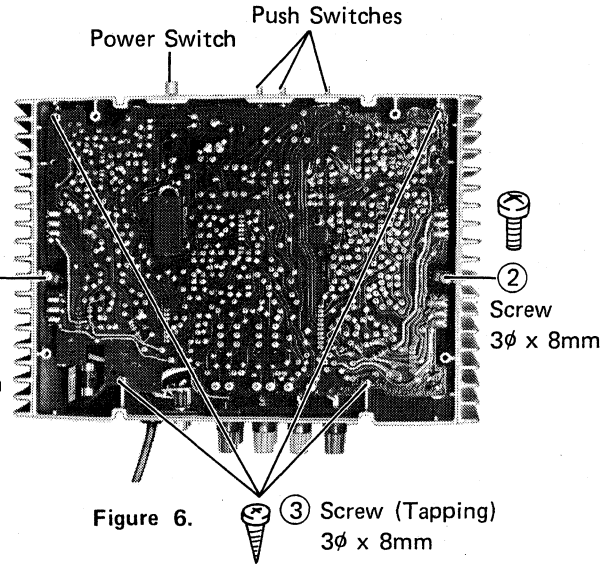


Figure 6.

POWER TRANSFORMER REMOVAL

1. Remove the Bottom Plate and Main P.C. Board. See figures 4 and 5.
2. Remove 4 screws ④ securing Power Transformer and its Bracket. See figure 7.

SUPPLY P.C. BOARD REMOVAL

1. Remove the Bottom Plate, Main P.C. Board and Power Transformer. See figures 4, 5 and 6.
2. Remove 6 Screws ⑤. See figure 7.
3. Remove the Supply P.C. Board from the set.

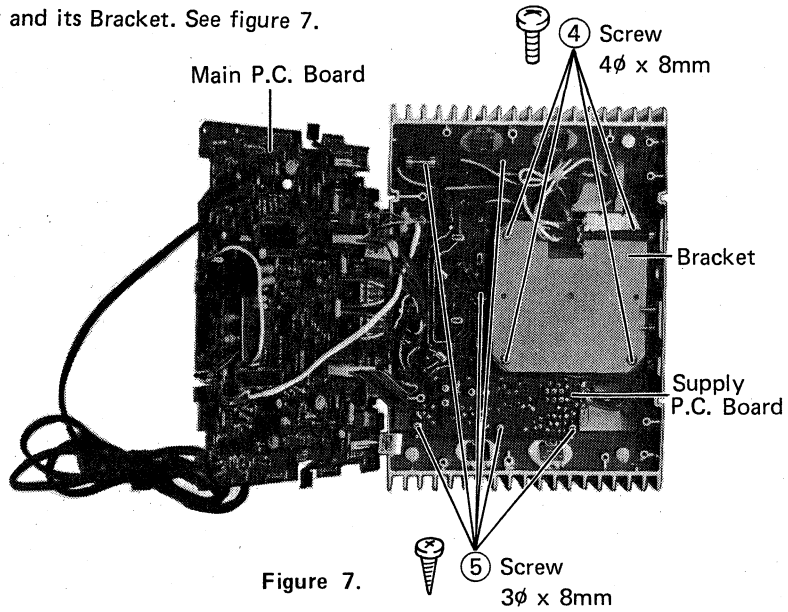


Figure 7.

4. ADJUSTMENTS

NEUTRAL POTENTIAL ADJUSTMENT

1. Push the Speaker selector push-button A with the Power switch "ON".
2. Connect the DC voltmeter to speaker terminal A and check the meter oscillation is kept within from +20mV to –20mV. See figure 8.
3. When the voltage deviates from the above scope, adjust Semi-fixed resistors of R651 (Rch.) and R652 (Lch.) with screwdriver.

   Note: Be careful not to short-circuit the pattern with screwdriver during adjustment.

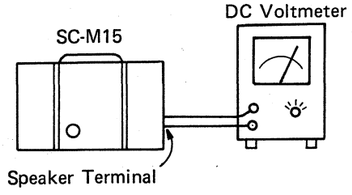


Figure 8.

IDLE POWER ADJUSTMENT

1. Connect the DC voltmeter to the both terminals of R645 (Rch.) and R646 (Lch.) and check the meter oscillation is kept within from 1mV to 2mV. See figure 9.
2. When the voltage deviates from the above scope, adjust the Semi-fixed resistors R653 (Rch.) and R654 (Lch.) with screwdriver.

   Note: The adjustment should be made one minute later after turning the power on.
   Be careful not to short-circuit the pattern with screwdriver during adjustment.

CHECKING PROCEDUSE OF MAIN P.C. BOARD

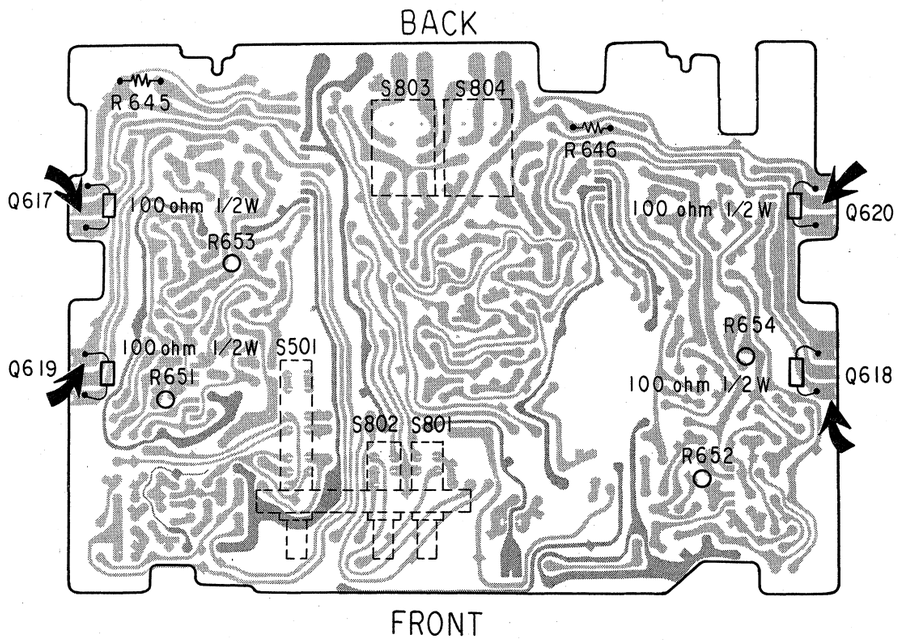


Figure 9.

1. After removing the Bottom plate, unsolder the 12 (3 x 4) pins of 4 power transistors (Q617, 618 ... 2SD718, Q619, 620 ... 2SB688) from the Main P.C. Board and solder 4 pcs of 100 ohm ½W resistor (22563101) between emitter and base on the pattern at four points. See figure 9.

   Caution: The pins of the four transistors unsoldered should be fell toward radiator fully away from the P.C. board.
   Never apply power before attaching the resistors.
2. Apply power and keep the Power switch all the way in ON position.
   To check the neutral potential, make sure that the voltage is kept within from +20mV to –20mV, connecting the speaker terminal to DC voltmeter.

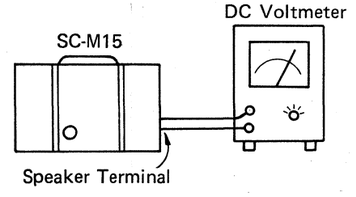


Figure 10.

3. Voltage from 19V to 22.4V (GAIN from 25 dB to 27 dB) on the speaker terminal is normal when applying 1 kHz, 1V (0 dBV) sine wave to the Input terminal at none speaker load.

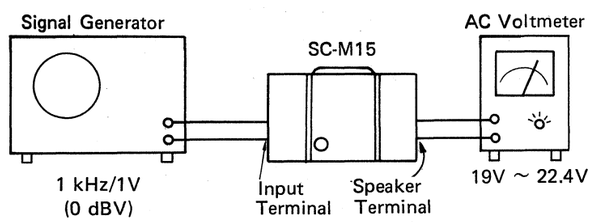


Figure 11.

WIRING REARRANGEMENT

Caution: Failure of this rearrangement may results in bad distortion in high-pass.
After fixing the P.C. board and soldering the power transistors, rearrange the wiring as figure 12.

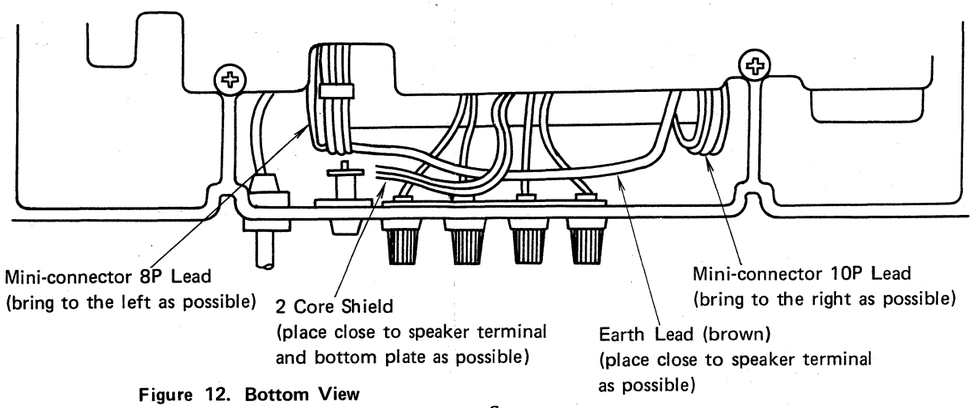
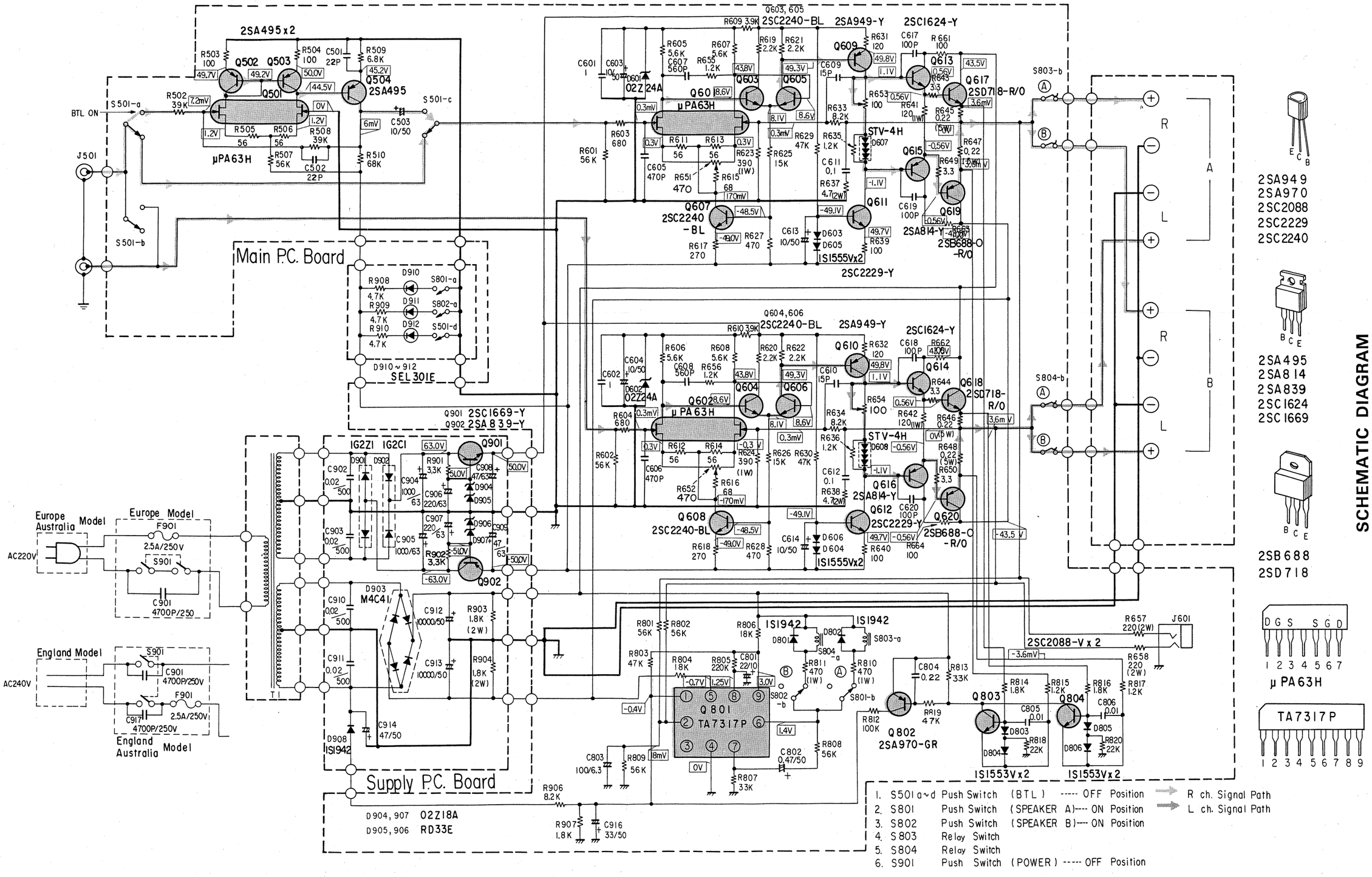

Mini-connector 8P Lead
(bring to the left as possible)
2 Core Shield
(place close to speaker terminal
and bottom plate as possible)
Earth Lead (brown)
(place close to speaker terminal
as possible)
Mini-connector 10P Lead
(bring to the right as possible)

Figure 12. Bottom View

5. SCHEMATIC DIAGRAM



SCHEMATIC DIAGRAM

Figure 13.

6. P.C. BOARD PARTS LOCATIONS

BOTTOM VIEW OF MAIN P.C. BOARD

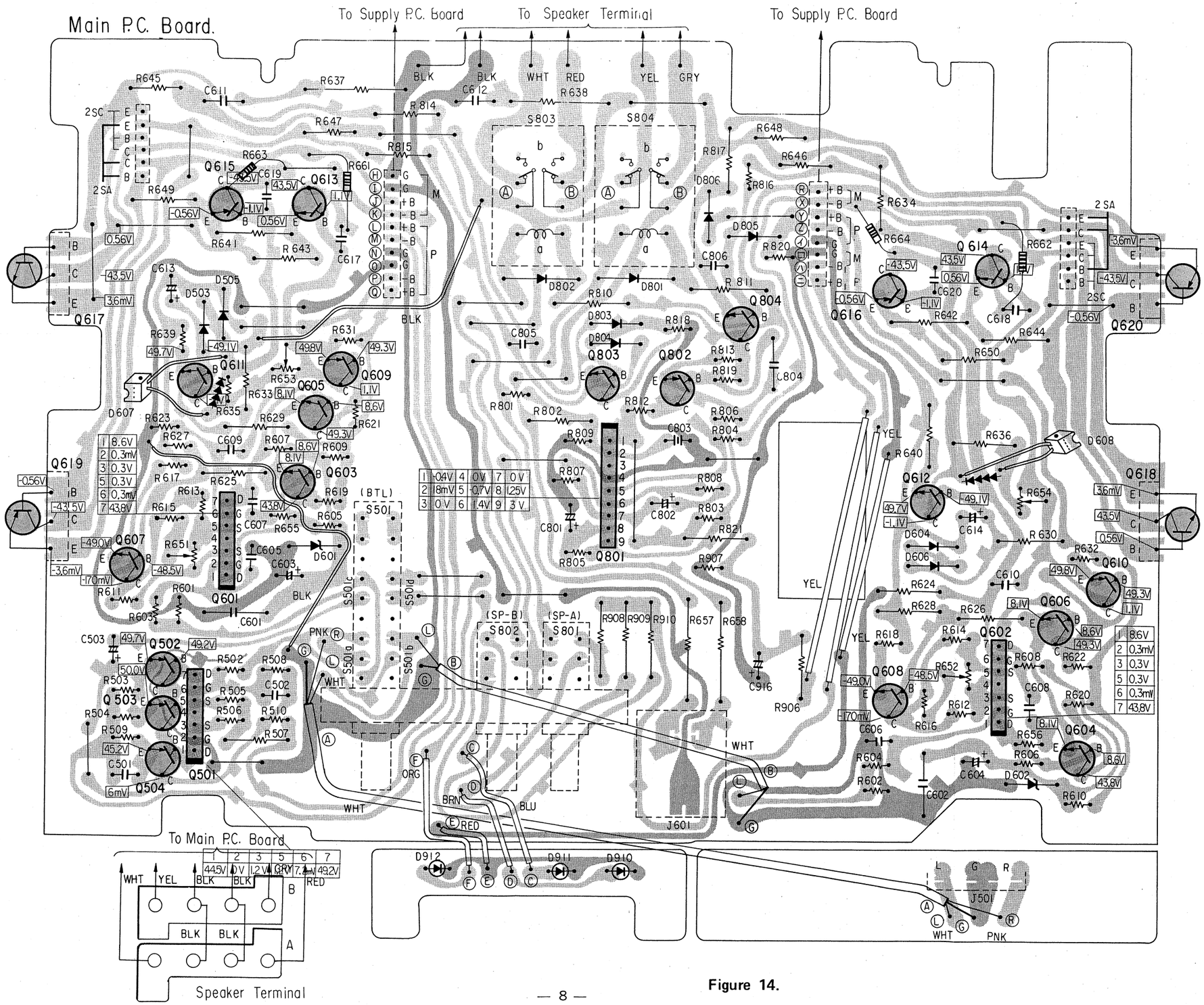


Figure 14.

BOTTOM VIEW OF POWER SUPPLY P.C. BOARD

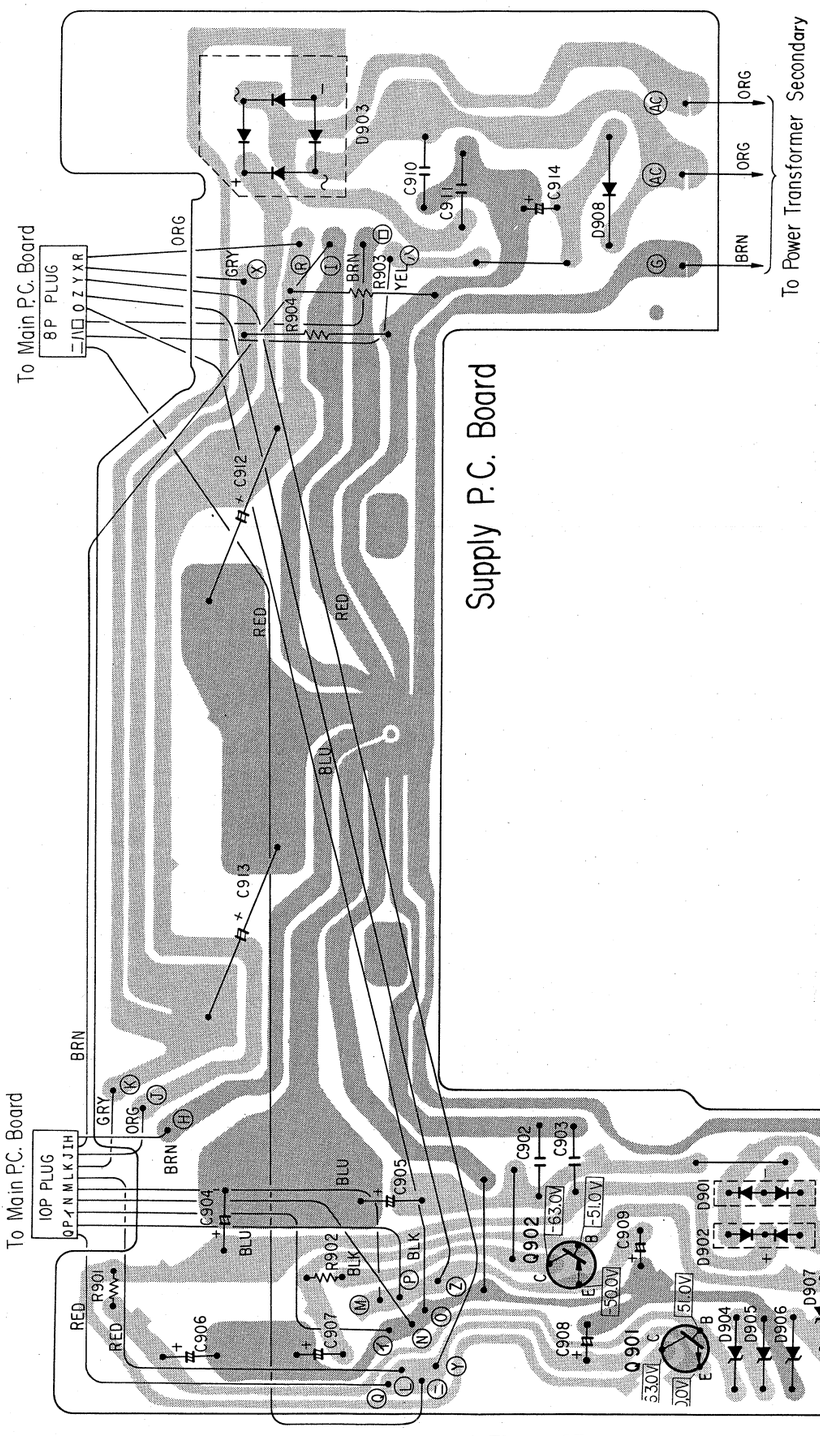
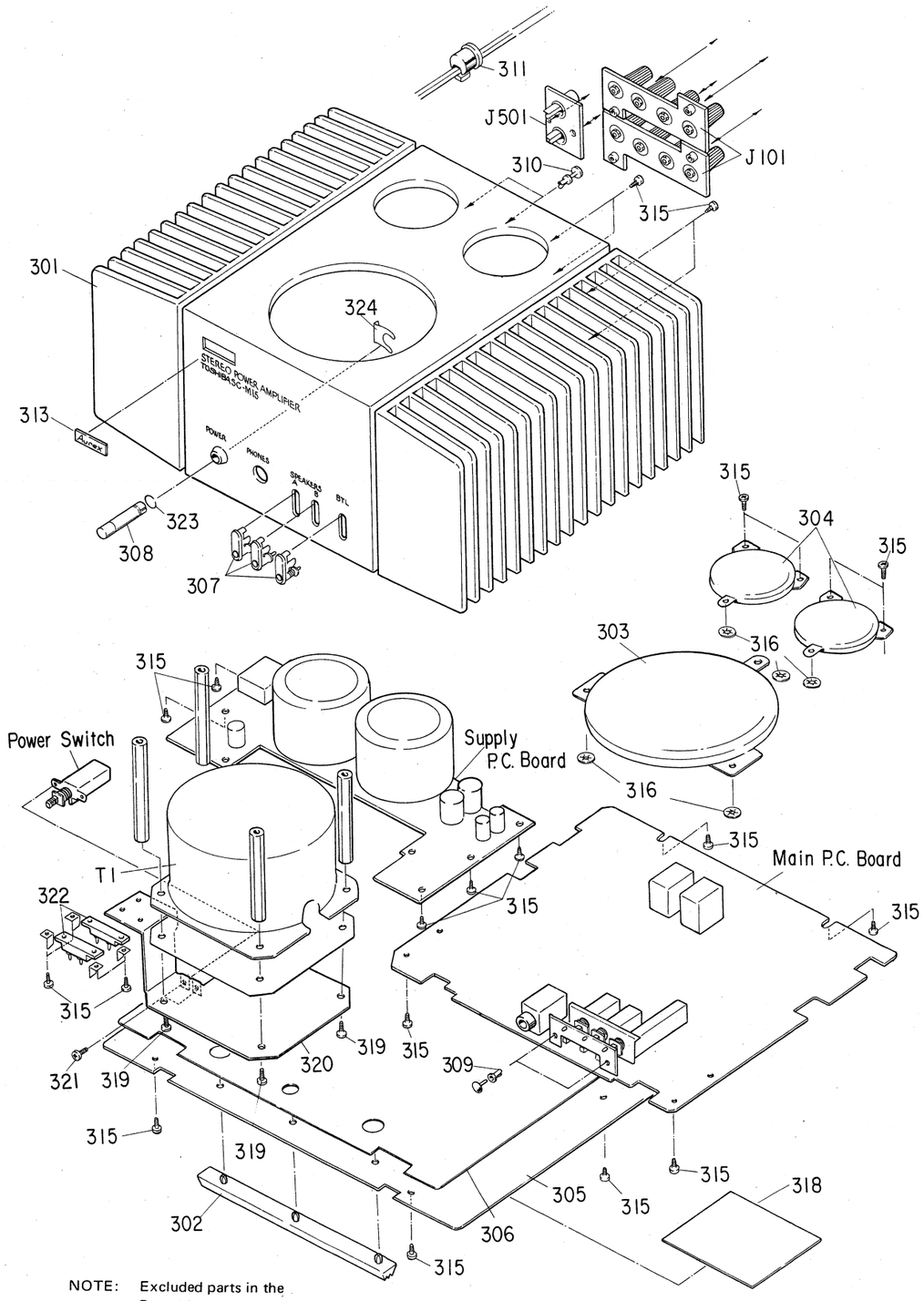


Figure 15.

7. CABINET PARTS LOCATIONS



NOTE: Excluded parts in the Parts List are not available as replacement parts.

Figure 16.

8. PARTS LIST

Symbol No.	Part No.	Description
		CABINET PARTS
301	22844123	Chassis (Europe)
	22844156	Chassis (England/Australia)
302	22874046	Leg, Bottom Plate
303	22843625	Cap, Decoration, Large
304	22843626	Cap, Decoration, Small
307	22824264	Knob, Speaker/BTL
308	22824266	Knob, Power
309	22705020	Rivet, 3ϕ x 4.5mm
310	22705022	Rivet, 3ϕ x 5.5mm
311	25844035	Bushing, Power Cord
313	22864193	Badge, AUREX
315	22707327	Screw (BID), 3ϕ x 8mm, Tapping
316	22702138	Speed Nut, 3ϕ
317	22707165	Screw (BID), 3ϕ x 10mm
318	22864239	Label, Caution
		TRANSISTORS, ICS AND DIODES
Q501	22114583	Transistor, μPA63H-M-L/M
Q502, 503, 504		Transistor, 2SA495-TM.Y
Q601, 602	22114583	Transistor, μPA63H-M-L/M
Q603, 604		Transistor, 2SC2240-BL
Q605, 606		Transistor, 2SC2240-BL
Q607, 608		Transistor, 2SC2240-BL
Q609, 610		Transistor, 2SA949-Y
Q611, 612		Transistor, 2SC2229-Y
Q613, 614		Transistor, 2SC1624-Y.JA
Q615, 616		Transistor, 2SA814-Y.JA
Q617, 618		Transistor, 2SD718-O-R/O
Q619, 620		Transistor, 2SB688-O-R/O
Q801		IC, TA7317P
Q802		Transistor, 2SA970-GR
Q803, 804		Transistor, 2SC2088-V
Q901		Transistor, 2SC1669-O-O/Y
Q902		Transistor, 2SA839-O-O/Y
D601, 602		Diode, 02Z24A
D603, 604		Diode, 1S1555V
D605, 606		Diode, 1S1555V
D607, 608	22115424	Diode, STV-4H
D801, 802		Diode, 1S1942
D803, 804		Diode, 1S1553V
D805, 806		Diode, 1S1553V
D901		Diode, 1G2Z1
D902		Diode, 1G2C1
D903	22115460	Diode, M4C-41
D904, 907		Diode, 02Z18A
D905, 906	22115347	Diode, RD33E
D908		Diode, 1S1942
D910, 911, 912	22115473	Diode, SEL301E

Symbol No.	Part No.	Description
		ELECTRICAL PARTS
T1	22223276	Transformer, Power (Europe)
	22223289	Transformer, Power (England/Australia)
J101	22162431	Terminal, Speaker
J501	22163701	Jack, US PIN, Input
J601	22163676	Jack, Headphone
S501, 801, 802	22195181	Switch, Push, Speaker/BTL
S803, 804	22148124	Relay
S901	22195318	Switch, Push, Power
F901	22144372	Fuse, 2.5A/250V
	22165074	Holder, Fuse
	22176286	Cord, Power (Europe)
	22176536	Cord, Power (England)
	22176588	Cord, Power (Australia)
		CAPACITORS
		J = ±5%, K = ±10%, M = ±20%, Z = –20+80%
C501	22380078	Polystyrene Film, 22pF, J, 125V
C502	22380078	Polystyrene Film, 22pF, J, 125V
C503	22448100	Electrolytic, 10mfd, 50V
C601, 602	22370208	Metalized Polyester Film (V Type) 1mfd, K, 250V
C603, 604	22448100	Electrolytic, 10mfd, 50V
C605, 606	22388471	Polystyrene Film, 470pF, K, 125V
C607, 608	22388561	Polystyrene Film, 560pF, K, 125V
C609, 610	22380065	Polystyrene Film, 15pF, J, 125V
C611, 612	22371104	Mylar, 0.1mfd, J, 50V
C613, 614	22448100	Electrolytic, 10mfd, 50V
C617, 618	22388101	Polystyrene Film, 100pF, K, 125V
C619, 620	22388101	Polystyrene Film, 100pF, K, 125V
C801	22445220	Electrolytic, 22mfd, 16V
C802	22448478	Electrolytic, 0.47mfd, 50V
C803	22440154	Electrolytic, 100mfd, 6.3V
C804	22372224	Mylar, 0.22mfd, K, 50V
C805	22372103	Mylar, 0.01mfd, K, 50V
C806	22372103	Mylar, 0.01mfd, K, 50V
C901, 917	22340090	Ceramic, 4700pF, Z, 250V
C902, 903	22340032	Ceramic, 0.02mfd, Z, 500V
C904, 905	22440228	Electrolytic, 1000mfd, 63V
C906, 907	22449221	Electrolytic, 220mfd, 63V
C908, 909	22440036	Electrolytic, 47mfd, 100V
C910, 911	22340032	Ceramic, 0.02mfd, Z, 500V
C912, 913	22440229	Electrolytic, 10000mfd, 50V
C914	22448470	Electrolytic, 47mfd, 50V
C916	22448330	Electrolytic, 33mfd, 50V

Symbol No.	Part No.	Description
		RESISTORS
		All resistors are ¼W, ±5% carbon film unless otherwise noted. K = ±10%, J = ±5%
R502	22555393	39K ohm
R503, 504	22555101	100 ohm
R505, 506	22555560	56 ohm
R507	22555563	56K ohm
R508	22555393	39K ohm
R509	22555682	6.8K ohm
R510	22555683	68K ohm
R601, 602	22555563	56K ohm
R603, 604	22555681	680 ohm
R605, 606	22555562	5.6K ohm
R607, 608	22555562	5.6K ohm
R609, 610	22555392	3.9K ohm
R611, 612	22555560	56 ohm
R613, 614	22555560	56 ohm
R615, 616	22555680	68 ohm
R617, 618	22555271	270 ohm
R619, 620	22555222	2.2K ohm
R621, 622	22555222	2.2K ohm
R623, 624	22570269	390 ohm, J, Metal Film, 1W
R625, 626	22545153	15K ohm
R627, 628	22555471	470 ohm
R629, 630	22545473	47K ohm
R631, 632	22555121	120 ohm
R633, 634	22545822	8.2K ohm
R635, 636	22545122	1.2K ohm
R637, 638	22570359	4.7 ohm, J, Metal Film, 2W
R639, 640	22555101	100 ohm
R641, 642	22570264	120 ohm, J, Metal Film, 1W
R643, 644	22545339	3.3 ohm
R645, 646	22500186	0.22 ohm, K, Wire-wound, 5W
R647, 648	22500186	0.22 ohm, K, Wire-wound, 5W
R649, 650	22545339	3.3 ohm
R651, 652	22658260	470 ohm, Semi-fixed
R653, 654	22658292	100 ohm, Semi-fixed
R655, 656	22555122	1.2K ohm
R657, 658	22570311	220 ohm, J, Metal Film, 2W
R661, 662	22563101	Solid, 100 ohm, ½W, K
R663, 664	22563101	Solid, 100 ohm, ½W, K
R801, 802	22545563	56K ohm
R803	22555473	47K ohm
R804	22555183	18K ohm
R805	22555224	220K ohm
R806	22555183	18K ohm
R807	22555333	33K ohm
R808	22555563	56K ohm
R809	22555563	56K ohm
R810, 811	22570270	470 ohm, J, Metal Film, 1W
R812	22555104	100K ohm
R813	22555333	33K ohm
R814, 816	22555182	1.8K ohm
R815, 817	22555122	1.2K ohm
R818, 820	22555223	22K ohm
R819	22555473	47K ohm
R901, 902	22555332	3.3K ohm
R903, 904	22570322	1.8K ohm, J, Metal Film, 2W
R906	22545822	8.2K ohm
R907	22545182	1.8K ohm
R908, 909, 910	22570282	4.7K ohm, J, Metal Film, 1W
		ACCESSORIES
	22874047	Spacer, Foot
	22902227	Owner's Manual